Help w/ "Write Output and Run SWAT"
Posted by mednick - 2007/12/05 19:18

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I've gone through all of the steps to prepare a SWAT run (many times over) but cannot get the model to run successfully.

1.) ERROR msgs:
A couple of error msgs, noted below, but more importantly it seems like SWAT.exe is bailing out -- the DOS window closes w/in 2 seconds at most. I've managed a screen cap but not sure I got it at the end of it's brief run. I'm trying to run a 30-yr, yearly simulation.

Moreover, the resulting p---- and c---- tables have columns, but no data.

I get error msgs when I try to View the SWAT results, although I think it's on account of the unpopulated tables mentioned above.

First, AGWA Tools > View SWAT Results, when I try to add the simulation in the the second pull-down, I get:

    AVArray: Index 9 not in range 0..8

If I click OK on that error, I can still select the simulation and proceed to selecting an Output type, but when I click the Update button I get a Segmentation violation! error.

Also, on a couple of attempts, after receiving these two error msgs and clicking Done on the window, a DOS flashes and the .apr instantly closes...

2.) Inputs:

SWAT watershed, parameterized for 30-m land cover (MRLC LUT) and SSURGO soils (metadata indicates no problems with these).

Correctly-formatted daily precip data from NCDC, uniformly distributed.

At this point, I'm avoiding advanced settings. Seems like it should be a straight-forward run.

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Re:Help w/ "Write Output and Run SWAT"
Posted by isburns - 2007/12/06 23:17

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You're correct that SWAT is bailing out and that is the result of the subsequent error messages you're receiving. When it runs correctly, you'll see it counting off the years as they are simulated, which will take longer than 2 seconds.

SWAT is failing because it doesn't like something in the input files. To try and narrow what this might be, you need to run SWAT from the command line. Navigate to the simulations directory of the project and type swat2000 at the command line. This will run SWAT without closing the window so you can see

where the error is occurring. It would probably be easier if you upload the screenshot instead of retyping everything that is displayed.

Shea

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Re:Help w/ "Write Output and Run SWAT"
Posted by mednick - 2007/12/07 19:25

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Thanks. It seems like the problem is the .pcp file. I had no trouble creating it, or at least no error msgs, but I also don't know what it's supposed look like. Here's a screencap of the SWAT command line + the .pcp file shown in a text viewer: https://mywebspace.wisc.edu/mednick/web/screencap.jpg

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Re:Help w/ "Write Output and Run SWAT"
Posted by isburns - 2007/12/07 22:57

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I just ran a quick test and it looks like you have to start the first year of simulation on day 1 of the year. I thought you could run partial years, but apparently that is only for the end of the simulation, and not the beginning. If you remove the 1965 data from the .pcp file and try rerunning it, it should work.

Shea

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Re:Help w/ "Write Output and Run SWAT"
Posted by mednick - 2007/12/10 20:25

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Almost there..?

Changing precip files to start at Jan 1 enables me to run SWAT; however, it only gets through the first few years, depending on how many years I specify. E.g., when I try to run a 30-yr simulation (my goal) it bails at year 5. When I try to run a 4-yr simulation, it bails after 2 years, etc.

For all runs, error msg in the DOS window:

  run-time error M6201: MATH
  - exp: DOMAIN ERROR

Screencap at: https://mywebspace.wisc.edu/mednick/web/screencap2.jpg

Many thanks,

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Re:Help w/ "Write Output and Run SWAT"
Posted by lainie - 2007/12/19 17:41

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If you are NOT simulating temperature, please make sure the temperature file is exactly the same length as the precipitation file.

If you are simulating temperature, then you'll need to send us your simulation directory as a zip file. However, because of the holidays we won't be able to look at it until January.

Lainie/Shea

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Re:Help w/ "Write Output and Run SWAT"
Posted by mednick - 2008/01/09 19:09

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Thanks. I'm simulating temp. As a test, though, I created a mock .tmp file with the same number of rows formatted according to SWAT doc, but got the same result: bail-out at year 5 of 30. I've posted the simulation directories for both at:

http://mywebspace.wisc.edu/mednick/web/sim.zip
http://mywebspace.wisc.edu/mednick/web/obs.zip

Adam

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Re:Help w/ "Write Output and Run SWAT"
Posted by lainie - 2008/01/11 20:57

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Thanks for sending your directories. We'll take a look at them and should get back to you in the next few days.

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Re:Help w/ "Write Output and Run SWAT"
Posted by lainie - 2008/01/14 18:01

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We've determined that the problem is with the soils parameterization. Please send us either the link to the STATSGO dataset you're using or send us the dataset itself so we can track down the source of the problem.

Thanks.

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Re:Help w/ "Write Output and Run SWAT"
Posted by mednick - 2008/01/14 18:40

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I have posted the SSURGO data I used, plus the soils tables generated by AGWA & stored in av_cwd directory -- at http://mywebspace.wisc.edu/mednick/web/soils_data.zip.

I notice that the generated "comp," "chtexgrp," and "chorizon" tables do not have their proper SSURGO field names.

Also, the generated file extension on the "..._soil_lut" table is .bdf instead of .dbf, athough it reads correctly in my AV project.

Finally, the "..._temp_swat_soil_lut" table has contains record (#21) with a Null value, under the "Ks" field.

Many thanks

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Re:Help w/ "Write Output and Run SWAT"
Posted by lainie - 2008/01/14 21:35

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Could you also provide the actual data layer (shapefile) or give us the location of your project so we can download the SSURGO data ourselves. This will enable us to test it on our system.

We will also look into the other table issues you mentioned.

Thanks

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Re:Help w/ "Write Output and Run SWAT"
Posted by mednick - 2008/01/16 20:46

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I've posted two shapefiles:

1) The projected SSURGO "soilmu_a" shapefile that I used;
2) The descritized/parameterized watershed

http://mywebspace.wisc.edu/mednick/web/layers.zip.

Thanks,
Adam

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Re:Help w/ "Write Output and Run SWAT"
Posted by lainie - 2008/01/22 22:13

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Hi Adam,

We ran AGWA/SWAT with your data and the SSURGO soils. The problem is with the SSURGO tables. This is something that we cannot fix, so unless you can get a correct version of SSURGO, you might want to try using STATSGO soils.

Good luck,
Lainie

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Re:Help w/ "Write Output and Run SWAT"
Posted by mednick - 2008/01/22 22:33

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The SSURGO tables I used were downloaded from NRCS -- Could you be more specific with respect to what is wrong with them?

I think I mentioned previously that the tables lost their field names when I processed with AGWA soils utility... I will re-enter the field names into the three tables and see if that makes any difference.

Otherwise, I'm not sure what could be wrong with them.

Thanks again for your help,
Adam

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Re:Help w/ "Write Output and Run SWAT"
Posted by lainie - 2008/01/22 23:06

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We downloaded the SSURGO data from the NRCS also. When we spot checked the values in the tables we noticed missing and irregular values, and some that seemed to be misplaced in the wrong columns.   So it appears to be a problem with the source data.

Also, the field names are added when they are imported into the ACCESS database, and these were fine.

You might want to research other sources for SSURGO soils data, or contact the NRCS directly.

Lainie

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Re:Help w/ "Write Output and Run SWAT"
Posted by mednick - 2008/01/31 18:46

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I can check with NRCS but first need to define the problem. Could you perhaps provide one or two field+record numbers, from the tables I posted, where the data appear irregular or are otherwuse missing?

Also, if anyone could post an example of SSURGO "comp," "chtexgrp," and "chorizon" tables successfully used in V1.5 that would be helpful.

(I did try adding field names to the tables. Prompted an error message when I tried to re-run the parameterization: "Invalid SSURGO tables". Since I didn't get this before, I'm assuming the original tables were at least formatted correctly.?)

Many Thanks,

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Re:Help w/ "Write Output and Run SWAT"
Posted by lainie - 2008/01/31 21:21

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Hi Adam,

I've attached the soils horizon table from the Wisconsin SSURGO data set, and one from the Arizona data set that we know works fine in AGWA 1.5. I've saved them both as Excel files to make them easier to look at.

Open them both and look at the following in wis_chorizon.xls.

Records 8, 9, 22, 23, 140, 141, 155, 156

Fields DV, DW, DX: These values are out of the normal range.
Fields EH, EI, EJ: These values appear to be in the wrong field.

Compare these values with the ones in az_chorizon.xls. I hope this helps to show that the Wisconsin table is corrupted.

While we appreciate you wanting to know the exact problem, it is not an efficient use of our time to try to troubleshoot this problem further while irregularities are still present in the tables, and which are the likely source of the problem. Once the tables are corrected, if a problem still exists we would need to begin the very tedious and time-intensive task of stepping through each line of code and checking values, no easy task in ArcView and Avenue.

Lainie http://www.tucson.ars.ag.gov/agwa/images/fbfiles/files/horizon.zip

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